

Six new records for the Heteroptera (Hemiptera) fauna of Kosovo

Devrim BAYMAK¹ Suat KIYAK²

¹National Institute of Public Health of Kosova, 10000 Nëna Tereze, Pristina, KOSOVO

²Gazi University, Faculty of Science, Biology Department, 06500--Ankara/ Turkey

E-mail: skiyak@gazi.edu.tr ORCID iD: 0000-0001-8167-8283 (SK)

ABSTRACT: This study was conducted based on 14 specimens belonging to 6 species of 5 genera in 4 families of the suborder Heteroptera (Hemiptera). The specimens were collected during fieldwork in Prizren, Peja, Shtime, Istok, Gjakova and Strpce provinces from Kosovo in 2012. All these six species in this study are new records for the Kosovo. These species; *Brachycoleus decolor* Reuter, 1887 and *Lygus rugulipennis*, (Poppius, 1911) (Miridae); *Nabis limbatus* Dahlbom, 1851 and *Nabis capsiformis* (Germar, 1838) (Nabidae); *Monosteira unicastata* (Mulsant & Rey) (Tingidae); *Gampsocoris culicinus culicinus* Seidenstücker, 1948 (Berytidae).

The distribution of each species are presented in Kosovo and showed map.

KEYWORDS: Heteroptera, new records, fauna, Kosovo

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INTRODUCTION

Suborder Heteroptera are represented by 9365 species and 246 subspecies belong to 1632 genera in the Palearctic region (Aukema et al., 2013).

The state of knowledge of the suborder Heteroptera in Kosovo is, at present, still in its initial stage, and still relying heavily on the 20th century works by Protic (1990-2012) and supplemented by the catalog published by Aukema and Rieger (1996, 1999, 2001).

No studies have been conducted on the species of Heteroptera in Kosovo, except for what Protic has reported, and have been established. Chronologically detailed information about the studies on heterop-

tera in the geography of the former Yugoslavia are given by (Protic, 2000), and she stated that the first record *Apodiphus amygdali* (Germar, 1817) was given from Croatia.

Protic (2000) summarized the studies of Heteroptera fauna in old Serbia in five periods. During these five periods, she discussed the studies and investigations carried out in Serbia and Montenegro in the former Yugoslavia; Fieber (1861), Horvath (1903), Kormilev (1927-1945) today's Macedonia -Skopje and Tetovo, Gradojevic (1963), Jankovic (1963, 1964, 1966, 1972) of Yugoslavia, Serbia and Macedonia are mentioned in the records of researchers.

According to the studies conducted to date, 222 species belonging to 29 families are known from Heteroptera in Kosovo (Protic, 1988, 1990, 2008, 2009, 2001, 2012). As a result of the search of all the literature related to the region, no previous records of the species recorded in Kosovo in this study were found (Fieber, 1861; Horváth, 1903, 1916; Wagner, 1970/71, 1975; Stichel 1957-1962, 1956-1958, 1958-1960; Protic, 1990, 1998, 2000, 2001, 2002, 2004, 2005, 2006, 2007a,b, 2008, 2009, 2010, 2011a,b,c; Protic, Zivic, 2012; Josifov, 1986; Josifov, Simov, 2006; Schumacher, 1918; Csiki, 1940).

MATERIALS AND METHODS

A total of 14 adult specimens of six species were collected from 8 locations in Kosovo from June to September in . (Figure 1 and Table 1).

Samples were collected by insect trap and killed in 70% alcohol jars., the samples were prepared and. Entomological materials were prepared based on technical and standards of data collection of the zoology museum.

The samples were determined using identification keys by Stichel (1955-1962), Wagner (1970/71) and Bei-Bienko (1964).

In Table 2 was given the provinces of Kosovo where new faunistic records of six species belonging to four families of the suborder Heteroptera collected and recorded. (Table 2).

The distribution of the species is marked on the map (Figure 1).

All samples are deposited in the collection of the Zoological Museum of Gazi University (ZMGU), Ankara, Turkey.

RESULTS

New recorded data on Heteroptera fauna of Kosovo are as follows:

Family: Miridae Hahn 1831,

***Brachycoleus* Fieber, 1858**

***Brachycoleus decolor* Reuter, 1887**

Material examined:

Loc. D6, Prizren 42°12'22.N 20°45'21.E 400-500 m 25.07.2012, 1♀, 1♂,

***Lygus* Hahn, 1833**

***Lygus rugulipennis* (Poppius, 1911)**

Material examined:

Loc. D7, Gjakova (Dujak) 42°27'37.N 20°22'34.E, 420-480 m, 23.07.2012, 1♀; Loc. D8, Strpce (Brezovica) 42°11'59.N 20°59'5.E, 900-1250 m, 28.07.2012, 1♀, 1♂.

Family: Nabidae A. Costa, 1853

***Nabis* Latreille 1802**

***Nabis limbatus* Dahlbom, 1851**

Material examined:

Loc. D4, Shtime,(Belaj) 42°26'14.N, 21°1'23.E, 600-650 m, 25.07.2012, 1♂.

***Nabis capsiformis* Germar, 1838**

Material examined:

Loc. D5, Istok, 42°46'48.N 20°28'50.E, 450-650 m, 28.06.2012, 1♀.

Family: Tingidae Laporte, 1832

***Monosteira* Costa, 1862**

***Monosteira unicostata* (Mulsant & Rey, 1852)**

Material examined:

Loc.D1, Prizren 42°12'36. N, 20°44'7.E, 400-420 m, 15.08.2012, 1♀; Loc.D2, Prizren 42°12'28. N, 20°43'34.E, 380-420 m, 18.09.2012, 1♀, 1♂; Lok: D3, Peja 42°39'12.N, 20°17'26.E, 500-550 m, 22.07.2012, 1♀, 2♂♂.

Family: Berytidae Fieber, 1851

***Gampsocoris* Fuss, 1852**

***Gampsocoris culicinus* Seidenstücker, 1948**

Material examined:

Loc. D6, Prizren Kara Potok, 42°
12'22.22"N 20°45'21.14"E, 400-500m,
25.07.2012, 1♂.

DISCUSSION

In this study, 14 specimens were collected belonging to four families of Heteroptera.

These are identified as six species and new records for Kosovo. And these six species were recorded from follows Kosovo provinces: Prizren, Peja, Shtime, Istok, Gjakova, Strpce for the first time

(Table.2) The number of species by families is as follows:

Miridae 2, Nabidae 2, Tingidae 1, and Berytidae 1.

The newly recorded six species from Kosovo are *Monosteira unicastata* (Mulsant & Rey) (Tingidae); *Nabis limbatus* Dahlbom, 1851 and *Nabis capsiformis* (Germar, 1838) (Nabidae); *Brachycoleus decolor* Reuter, 1887 and *Lygus rugulipennis*, (Poppius, 1911) (Miridae); *Gampsocoris culicinus* (Seidenstücker 1948) (Berytidae).



Fig. 1. Study area and localities(D1-D8) at the Republic of Kosovo

Table 1. Sampling localities of Heteroptera specimens from Kosovo. Geographical coordinates, sampling date, number of examples (n).

Locality no	Province	Coordinates	Altitude (m)	Sampling Date	n
D1	Prizren	42°12'36. N, 20°44'7. E	400-420	15.08.2012	1
D2	Prizren	42°12'28. N, 20°43'34. E	380-420	18.09.2012	2
D3	Peja	42°39'12. N, 20°17'26. E	500-550	22.07.2012	3
D4	Shtime(Belaj)	42°26'14. N, 21°1'23. E	600-650	25.07.2012	1
D5	Istok	42°46'48. N, 20°28'50. E	450-650	28.06.2012	1
D6	Prizren	42°12'22. N, 20°45'21. E	400-500	25.07.2012	3
D7	Gjakova (Dujak)	42°27'37. N, 20°22'34. E	420-480	23.07.2012	1
D8	Strpce (Brezovica)	42°11'59. N, 20°59'5. E	900-1250	28.07.2012	2

Table 2. Heteropteran species recorded from Kosovo provinces.

Province	The name of Species
Prizren	<i>Monosteira unicastata</i> (Mulsant & Rey, 1852), <i>Brachycoleus decolor</i> Reuter, 1887; <i>Gampsocoris culicinus</i> (Seidenstucker 1948)
Peja	<i>Monosteira unicastata</i> (Mulsant & Rey, 1852)
Shtime(Belaj)	<i>Nabis limbatus</i> Dahlbom, 1851
Istok	<i>Nabis capsiformis</i> Germar 1838
Gjakova (Dujak)	<i>Lygus rugulipennis</i> (Poppius 1911)
Strpce (Brezovica) (Brezovica)	<i>Lygus rugulipennis</i> (Poppius 1911)

REFERENCES

- Aukema, B. and Rieger, C., 1996, *Catalogue of the Heteroptera of the Palaearctic Region. Volume 2. Cimicomorpha I.* The Netherlands Entomological Society, xiv + 361 pp.
- Aukema, B. and Rieger, C., 1999, *Catalogue of the Heteroptera of the Palaearctic Region. Volume 3. Cimicomorpha II.* Netherlands Entomological Society, Wageningen., 577 pp.
- Aukema, B. and Rieger, C., 2001, *Catalogue of the Heteroptera of the Palaearctic Region. Volume 4. Pentatomomorpha I.* Netherlands Entomological Society, Wageningen, 346 pp.
- Aukema, B., Rieger, C., Rabitsch, W., 2013, *Catalogue of the Heteroptera of the Palaearctic Region. Vol. 6. Supplement.* Netherlands Entomological Society, Wageningen, xxiii + 653 pp.
- Fieber, F. X., 1861, *Die europäischen Hemipteren.*- Druck und Verlag von Carl Gerold's Sohn, Wien.
- Horvath, G., 1903, Szerbia Hemiptera- fauna- ja.- *Annales Musei Nationalis Hungarici*, 1:3-28
- Horvath, G., 1916, Albania Hemiptera Fauna- ja, *Annales Musei Nationalis Hungarici*, 16.
- Protic, L .J., 1990, Investigation of Heteroptera fauna in Yugoslavia, *Acta Ent. Nat. Mus. Slovenian Sci. Ljubljana.*, 53-63.
- Protic, L. J., 1998, Catalogue of the Heteroptera fauna of Yugoslav Countries Part One, *Natural History museum in Belgrade*, 1-215.
- Protic, L. J., 2000, Biodiversity of the Heteroptera of Serbia, *Acta Ent. Nat. History Mus. Belgrade.*, 5(1): 1-12.
- Protic, L .J., 2001, Catalogue of the Heteroptera fauna of Yugoslav Countries Part Two, *Natural History Museum in Belgrade*, 1-271.
- Protic, L. J., 2002a, Species of the genus *Dicyphus* (Heteroptera: Miridae) in Serbia, *Acta Ent. Slovenian Sci. Ljubljana.*, 10 (1): 103-114.
- Protic, L. J., 2002b, New Miridae in the Heteroptera fauna of Serbia, *Acta Ent. Nat. History Mus. Belgrade.*, 7 (1): 11-15.
- Protic, L. J., 2004, Additions and Corrections to the Catalogue of the Heteroptera of the Pal-

- aeartic Region: Tingidae of the Balkan Peninsula, *Acta Entomologica Slovenica.*, 12 (2): 229-238.
- Protic, L. J., 2005, New Records of the Heteroptera from Serbia (Insecta: Heteroptera: Tingidae), *Arch. Biol. Sci., Belgrade*, 57 (2): 147-149
- Protic, L. J., 2008, Diversity and Distribution of the Family Nabidae (Heteroptera) In Serbia, *Acta Entomologica Serbica*, 11 (1/2): 19-32.
- Protic, L. J., Zivić, I., 2007a, New data on water bugs (Heteroptera) in Serbia, *Acta Ent. Nat. History Mus. Belgrade., Institut of Zoology, Fac. Of Biol. Univ. Of Belgrade*, 12 (2): 17-26.
- Protic, L. J., 2007b, Family Cydnidae (Insecta: Heteroptera) in the Natural History Museum in Belgrade, *Polish Jurnal of Entomology*, 76: 143-159.
- Protic, L. J., 2008, Old Collection of Heteroptera at the Natural History Museum in Belgrade, *Bulletin of the Natural History Museum*, 1: 187-203.
- Protic, L. J., 2009, Records of the family Saldidae (Heteroptera) in Serbia and in collections of the Natural History Museum in Belgrade, *Acta Ent. Nat. History Mus. Belgrade*, 2:109-120.
- Protic, L. J., 2010, Assassin Bugs (Insecta: Heteroptera: Reduviidae) in Collections of the Natural History Museum in Belgrade, *Acta Ent. Nat. History Mus. Belgrade*, 3: 141-159.
- Protic, L. J., 2011a, Genus Geocoris Fallen (Heteroptera: Lygaeidae) in Serbia and Adjacent Regions, *Acta Ent. Nat. History Mus. Belgrade*, 16 (1): 25-33.
- Protic, L. J., 2011b, The genus Phytocoris Fallen (Hemiptera: Heteroptera: Miridae) in Serbia, *Heteropterus Revista de Entomologia*, 11 (2): 329-337.
- Protic, L. J., 2011c, Heteroptera, *Prirodnjacki Muzej u Beogradu*, 1-259.
- Protic, L. J., Zivić, N., 2012, Water bugs (Heteroptera) in the catchment area of river sitnica (Serbia), *Acta Ent. Nat. History Mus. Belgrade.*, 17 (1): 29-37.
- Josifov, M. 1986, The zoogeographical character of Balkan Heteroptera, *Zool. Inst. Akad. of Sciences, Ruski 1, 1000 Sofia Bulgaria Proc. 2nd Int. Congr. Rhynchota Balkan, Mikrolimni - Greece*, 6-7.
- Josifov. M., Simov. N., 2006, Endemism among the Heteroptera on the Balkan Peninsula, *Denisia 19, zugleich Kataloge der OÖ. Landesmuseen*, 50, 876-898.
- Bei-Bienko, G. Ya., 1964, *Hemiptera in Keys to the Insects of the European Ussr*, Academy of Sciences of the USSR. Zoological Institute Moskova, 1: 852-1118.
- Schumacher, F., 1918, Beitrage zur Kenntnis der Hemi-pterenfauna Mazedoniens, *Sitzungsber der Gesellschaft Naturforschender Freunde zu Berlin*, 82-98.
- Csiki, E., 1940, Hemipteren Csiki Ernő al-talani kutatásai Albaniában, *Explorationes zoologicaeab E. Csiki in Albaniaperactae 17. A Magyar Tudomanios Akademia Balkan kutatásainaktudomanios Eredmenyei, Budapest, in Hungarian*, 1: 289- 315.
- Wagner, E., 1975, Vier Neue Miridae (Insecta, Hemiptera, Heteroptera) Aus Dem Mittelmeergebiete, *Bulletin Zoologisch Museum*, 4.17.a.
- Wagner, E. 1970/71. *Die Miridae Hahn, 1831, des Mittelmeerraumes und der Makaronesischen Inseln (Hemiptera, Heteroptera), Teil 1*, Ent. Abh. Mus. Tierk. (suppl.), 37: 1-484, Dresden.
- Stichel, W., 1956-1958, *Illustrierte Bestimmungstabellen der Wanzen II. Europa (Hemiptera-Heteroptera Europae)*, Hermsdorf, Berlin, 2: 170-907.
- Stichel, W., 1958-1960, *Illustrierte Bestimmungstabellen der Wanzen II. Europa (Hemiptera-Heteroptera Europae)*, Hermsdorf, Berlin, 3: 1-428.
- Stichel, W., 1957-1962, *Illustrierte Bestimmungstabellen der Wanzen II. Europa (Hemiptera-Heteroptera Europae)*, Hermsdorf, Berlin, 4: 1-830.
- Jessep, C. T., A Note on the Feeding Habits of Nabis Capsiformis Germar, *Entomology Division, D.S.I.R., Lincoln* 23.